# CURRICULUM VITAE

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*EDUCATION*:

M.S. in Physics, University of Delhi, Delhi, India
Ph.D. in Theoretical Physics, 1982, California Institute of Technology

*AWARDS*:

National Science Talent Scholarship,70-75, India
J. Robert Oppenheimer Fellow, 85-88, LANL
PI, DoE Grand Challenges Award (NERSC), 88–91
PI, DoE Grand Challenges Award (ACL,LANL), 92–96
Elected Fellow of American Physical Society 1994
PI, DoE Grand Challenges Award (ACL,NERSC), 97–00

*RESEARCH POSITIONS*:

Post-doctoral fellow at Northeastern University: 1982-1985
Honorary Post-doctoral fellow at Harvard University: 1983-1986
J. Robert Oppenheimer Fellow; Los Alamos National Laboratory: 1985-1988
Guest Professor, University of Wuppertal, March-April 1987.
Staff Scientist, T-8, Los Alamos National Laboratory, 1988 -
Visiting Lecturer, Caltech, April-June, 1991.
Program Manager for High Energy Physics at LANL, 2000-
Group Leader for High Energy Physics at LANL, 2001-

*TEACHING EXPERIENCE*:

Instructor for Undergraduate Physics: CALTECH 1977-1982
Northeastern University 1982-1985
Graduate Course in Physics 229c, CALTECH Spring 1991

## *SERVICES TO CONFERENCE/WORKSHOP ORGANIZATION*

[1] Organizer, First Workshop on Monte Carlo Renormalization Group Methods, Cornell July 1985.
(with K. G. Wilson).
[2] Convener "Parallel Session on Lattice Gauge Theory": 1988 DPF conference, Storrs, Connecticut (August 1988).
[3] Convener "Parallel Session on Lattice QCD and theoretical aspects of QCD:" QUARK MATTER 88, Lennox, Massachusetts (Sept. 1988).
[4] Member, International Advisory Committee, Lattice 90, Tallahassee, Florida, 1990.
[5] Director, 1994 Santa Fe Workshop, "LARGE SCALE NUMERICAL STUDIES OF QCD" July 25 - August 12, 1994
[6] International Advisory Committee, Lattice 97, Edinburgh, Scotland, 1997.
[7] Scientific Director, 1997 Les Houches Summer school on "Probing the Standard Model of Particle Interactions", Les Houches, France, 1997.
[8] Local Organizing Committee, Lattice 98, Boulder, Colorado, 1998.
[9] Director, 1998 Santa Fe Workshop, "PERTURBATIVE AND NON-PERTURBATIVE ASPECTS OF THE STANDARD MODEL", July 27 - August 14, 1998.
[10] Organized ROSENFEST, Oct 31-Nov 1, 1998, Santa Fe. Symposium to celebrate the 65th birthday of Peter Rosen.
[11] Convener "Plenary session on Lattice QCD" at the APS Centennial Meeting, Atlanta, Georgia, March 20-26, 1999.
[12] International Advisory Committee, Lattice 99, Pisa, Italy, 1999.
[13] Convener, Session on "Quark Masses" at DPF 2000, The Ohio State University, August 2000.
[14] Local Organizing Committee, Lattice 00, Bangalore, India, August, 2000.
[15] Organizer, "Scaling Laws in Physics and Biology", Symposium in honor of Geoffrey West, Santa Fe, Dec 2000
[15] Organizer, "Confronting Terrorism – CT2002", Los Alamos national Laboratory, March 2002.

## *SERVICES TO LOS ALAMOS LABORATORY*

[1] Member, Search Committee for Theoretical Division Director, 1998-1999
[2] Member, Director's Colloquium Committee, 2000-
[3] Member, LANL Research Environment advisory committee, 2000-
[4] Leader, LANL Forum on International Security in the New Millenium, 2000-

## *EDITORIAL RESPONSIBILITIES*

[1] Editorial Board, "Parallel Computing", Elsevier, 1999-.
[2] Editor, "High Speed Computing", World Scientific, 1990-
[3] Divisional Associate Editor, Physical Review Letters, "Particles and Fields", 2000-2002.

## PUBLICATIONS IN PARTICLE PHYSICS

[1] Beyond Leading Order QCD Perturbative Corrections to the Pion Form;
(with R.D. Field, S. Otto and L. Chang).
*Nucl. Phys.* **B186** (1981) 429.

[2] Optimized Perturbation Theory: The Pion Form Factor.
*Proceeding of the Conference on Perturbative QCD at Florida State University, Tallahassee; 1981*, American Institute of Physics 1981.

[3] Hadron Spectrum, Spontaneous Breaking of Z(3) and Fake Loops in Lattice SU(3);
(with A. Patel).
*Phys. Lett.* **124B** (1983) 94.

[4] Monte Carlo Estimate of Hadron Masses in Lattice SU(3);
(with A. Patel).
*Nucl. Phys.* **B226** (1983) 152.

[5] Exotic Mesons in Lattice QCD;
(with A. Patel and F. Fucito).
*Phys. Lett.* **131B** (1983) 169.

[6] Extended Operators for Mesons in Lattice QCD;
(with A. Patel).
*Phys. Lett.* **131B** (1983) 425.

[7] String Tension, Glueball Masses and Finite Size Effects in Lattice SU(3);
(with A. Patel).
*Phys. Lett.* **138B** (1984) 294.

[8] An Improved Renormalization Group Transformation in 4-Dimensions;
(with R. Cordery and M.A. Novotny).
*Phys. Lett.* **128B** (1983) 425.

[9] Weak Transitions in Lattice QCD;
(with R.C. Brower, M.B. Gavela and G. Maturana).
*Phys. Rev. Lett.* **53** (1984) 1318.

[10] Monte Carlo Renormalization Group for SU(2) Lattice Gauge Theory;
(with R. Cordery, M. Novotny and A. Patel).
*Phys. Rev. Lett.* **53** (1984) 527.

[11] Monte Carlo Renormalization Group Improved Action for SU(2) Lattice Gauge Theory;
(with A. Patel).
*Phys. Rev. Lett.* **53** (1984) 531.

[12] Monte Carlo Renormalizaton Group for SU(3) Lattice Gauge Theory;
(with A. Patel, G. Guralnik, T. Warnock and C. Zemach).
*Phys. Rev. Lett.* **53** (1984) 1721.

[13] Monte Carlo Renormalization Group Analysis of SU(2) and SU(3) Gauge Theories;
(with A. Patel).
*Proceedings of the Argonne National Laboratory Workshop on Gauge Theory on a Lattice;* Argonne 1984.

[14] The Nature of the Transition in $d = 4$ U(1) Lattice Gauge Theory;
(with R. Cordery and M. Novotny).
NUB #2654; 1984. Condensed version; *Phys. Lett.* **172B** (1986) 86.
[15] One Loop Lattice Vacuum Energy;
(with G. Kilcup and S. Sharpe).
*Phys. Lett.* **147B** (1984) 339.
[16] Monte Carlo Renormalization Group Investigations of SU(2) Lattice Gauge Theory;
(with A. Patel).
*Nucl. Phys.* **B251** [FS13] (1985) 789.
[17] The Non-perturbative Beta-function for the SU(2) Lattice Gauge Theory;
(with S. Otto and A. Patel).
*Phys. Lett.* **159B** (1985) 143.
[18] The Non-perturbative Beta-function for the SU(3) Lattice Gauge Theory;
(with G. Guralnik, A. Patel, T. Warnock and C. Zemach).
*Phys. Lett.* **161B** (1985) 352.
[19] Improved Monte Carlo Renormalization Group:
*Proceedings of the Tallahassee Conference on Lattice Gauge Theory*, World Scientific Publishing (1985).
[20] Solving QCD Using Monte Carlo Renormalization Group Method;
(with A.Patel),
*Proceedings of APS Division of Particles and Fields Meeting; Santa Fe, New Mexico; 1984.*
World Scientific Publishing (1985).
[21] The SU(2) Deconfinement Temperature on a BCT Lattice;
(with W. Celmaster, E. Kovacs and F. Green).
*Phys. Rev.* **D33** (1986) 3022.
[22] The Deconfinement Transition and MCRG;
(with G. Guralnik, A. Patel, C. Zemach and T. Warnock).
*Proceedings of Conference on Quark Confinement and Liberation: University of California, Berkeley*; World Scientific, 1985.
[23] Epsilon Beyond the Naive Mass Spectrum;
(with G. Kilcup, S. Sharpe, G. Guralnik, A. Patel and T. Warnock).
*Phys. Lett.* **164B** (1985) 347.
[24] Monte Carlo Renormalization Group: A Review.
*Proceedings of the International Conference on Lattice Gauge Theories; Wuppertal, Germany 1985*; Plenum Press 1986.
[25] An Improved Estimate of Scalar Glueball Mass;
(with G. Guralnik, G. Kilcup, A. Patel, S. Sharpe).
*Phys. Rev. Lett.* **57** (1986) 1288.
[26] Improved Actions, Redundant Operators and Scaling in Lattice SU(3);
(with A. Patel).
*Phys. Lett.* **183B** (1987) 193.

[27] Weak Interaction Matrix Elements with Staggered Fermions I:
Theory and a Trial Run;
(with G. Guralnik, G. Kilcup, A. Patel, and S. Sharpe).
*Nucl. Phys.* **B286** (1987) 253.
[28] Clear Evidence for a First Order Chiral Transition in QCD;
(with G. Guralnik, G. Kilcup, A. Patel and S. Sharpe).
*Phys. Rev. Lett.* **57** (1986) 2621.
[29] The Hadron Spectrum on a $18^3 \times 42$ lattice ;
(with G. Guralnik, G. Kilcup, A. Patel, S. Sharpe and T. Warnock).
*Phys. Rev.* **D36** (1987) 2813.
[30] More on the first order chiral symmetry transition in QCD.
*Proceedings of the Brookhave Conference on Lattice Gauge Theory 1986*, Plenum Press 1987, and LAUR-86-4144.
[31] $\frac{\epsilon'}{\epsilon}$ from the lattice;
(with G. Guralnik, G. Kilcup, A. Patel, S. Sharpe).
*Phys. Lett.* **192B** (1987) 149.
[32] Food for Thought: Five Lectures on Lattice Gauge Theory.
*Lectures at China Center of Advanced Science and Technology Symposium/Workshop on Lattice Gauge Theory Using Parallel Processors*, Gordon and Breach, 1987.
[33] Introduction to Lattice Gauge Theory.
*Proceedings of the 1987 TASI in Elementary Particle Physics*, Santa Fe, July 1987.
[34] Exploring Hadron Masses in Lattice QCD with Light Quarks and an Improved Fermion Action.
(with Ph. de Forcrand, S. Güsken, K.-H. Mutter, A. Patel, K. Schilling, and R. Sommer)
*Phys. Lett.* **200B** (1988) 143.
[35] On The Finite Temperature Transition in QCD.
(with G. Guralnik, G. Kilcup, A. Patel, S. Sharpe).
*Phys. Lett.* **201B** (1988) 503.
[36] The Hybrid Monte Carlo algorithm and the Chiral Transition.
*Proceedings of the 1987 Conference on Field Theory on the Lattice*, Seillac, France, Sept. 1987, *Nucl. Phys.* **BProc. Supp. 4** (1988) 562.
[37] The $\beta$-function for pure gauge SU(3).
(with G. Kilcup, A. Patel and S. Sharpe)
*Phys. Lett.* **211B** (1988) 132.
[38] Tuning the Hybrid Monte Carlo Algorithm.
(with G. Kilcup and S. Sharpe)
*Phys. Rev.* **D38** (1988) 1278.
[39] The finite temperature transition for QCD with heavy quarks.
(with G. Kilcup and S. Sharpe)
*Phys. Rev.* **D38** (1988) 1288.

[40] Comparison of update algorithms for pure gauge SU(3).
(with G. Kilcup, A. Patel, S. Sharpe and P. de Forcrand)
*Mod. Phys. Lett.* **A3** (1988) 1367.

[41] An improved fermion action from block diagnolaization.
(with S. Güsken, K-H. Mütter, A. Patel, R. Sommer, and K. Schilling)
*Nucl. Phys.* **B314** (1989) 63.

[42] Simulating QCD with dynamical Wilson and Staggered fermions.
*Proceedings of the 1988 International Symposium LATTICE'88*, Fermilab, Sept. 1988,
*Nucl. Phys.* **B** (*Proc. Suppl.*) **9** (1989) 473.

[43] QCD with dynamical Wilson fermions.
(with C. Baillie, G. Guralnik, G. Kilcup, A. Patel and S. Sharpe)
*Phys. Rev.* **D40** (1989) 2072.

[44] Sea quarks and the hadron spectrum.
(with Apoorva Patel, Gregory W. Kilcup, Stephen R. Sharpe)
*Phys. Lett.* **225B** (1989) 398.

[45] Lattice calculation of the Kaon B-parameter.
(with Gregory W. Kilcup, Apoorva Patel, Stephen R. Sharpe)
*Phys. Rev. Lett.* **64** (1990) 25.

[46] QCD spectrum from the lattice.
*In the proceedings of HADRON89, Ajaccio, France*
Edited by F. Binon et.al., Editions Frontieres 1989, page337

[47] The Renormalization Group and lattice QCD.
*Lectures at Sixth TASI in Elementary Particle Physics*, Boulder, Colorado, June 1989.
*From Actions to Answers*, World Scientific 1990.

[48] Hadron spectrum from the lattice.
*Plenary talk at LATTICE89, Capri, Italy*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **17** (1990) 70.

[49] Lattice Calculation of Electroweak Amplitudes;
(with C. Bernard, R. Gupta, G. Kilcup and A. Soni)
*Int. Jour. of Supercomputer Applications*, Vol. 4, Number 3, p. 61

[50] Exploring glueball wavefunctions on the lattice.
(with C. Baillie, G.W. Kilcup, Apoorva Patel, Stephen R. Sharpe)
*Phys. Rev.* **D43** (1991) 2301.

[51] QCD with dynamical Wilson fermions.
*In the proceedings of LATTICE90, Tallahassee, Florida*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **20** (1991) 385.

[52] The quenched spectrum with Staggered fermions.
(with G. Guralnik, G.W. Kilcup, Stephen R. Sharpe)
*Phys. Rev.* **D43** (1991) 2003.

[53] A calculation of the pion's quark distribution amplitude in lattice QCD with dynamical fermions.
(with D. Daniel and D. Richards)
*Phys. Rev.* **D43** (1991) 3715.

[54] QCD with dynamical Wilson fermions II.
(with C. Baillie, R. Brickner, G. Kilcup, A. Patel and S. Sharpe)
*Phys. Rev.* **D44** (1991) 3272.

[55] Lattice calculation of the $I = 2$ pion scattering length.
(with G. Kilcup and S. Sharpe)
*Nucl. Phys.* **B383** (1992) 309.

[56] Phenomenology with Wilson fermions using smeared sources.
(with D. Daniel, G. Kilcup, A. Patel and S. Sharpe)
*Phys. Rev.* **D46** (1992) 3130.

[57] The Kaon B parameter with Wilson fermions.
(with D. Daniel, G. Kilcup, A. Patel and S. Sharpe)
*Phys. Rev.* **D47** (1993) 5113.

[58] Matrix Elements with Wilson fermions.
*In the proceedings of LATTICE91, Tsukuba, Japan*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **26** (1992) 337.

[59] Scaling, the Renormalization Group and Improved Lattice Actions.
One chapter in the book **"Quantum Fields on the Computer",** Ed. M. Creutz, World Scientific, 1992.

[60] Meson form-factors and wave-functions with Wilson Fermions
(with D. Daniel and J. Grandy)
*In the proceedings of LATTICE92, Amsterdam, The Netherlands*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **30** (1993) 419.

[61] $I = 2$ pion scattering amplitude with Wilson Fermions.
(with A. Patel and S. Sharpe)
*Phys. Rev.* **D48** (1993) 388.

[62] Bethe-Salpeter amplitudes and density correlations for mesons with Wilson fermions.
(with D. Daniel and J. Grandy)
*Phys. Rev.* **D48** (1993) 3330.

[63] Calculations of hadronic matrix elements using lattice QCD.
Proceedings of 1993 Mardi Gras Conference on "High Performance Computing and its applications in the Physical Sciences", World Scientific, 1994.

[64] Semi-leptonic form-factors of heavy-light mesons from lattice QCD.
(with T. Bhattacharya and D. Daniel)
hep-lat/9310007
Los Alamos Preprint Number LA-UR-93-3580.

[65] A pot-pourri of results in QCD from large lattice simulations on the CM5.
(with T. Bhattacharya)
*In the proceedings of LATTICE93, Dallas, Texas*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **34** (1994) 341.

[66] Geometric measurement of topological susceptibility on large lattices.
(with J. Grandy)
*In the proceedings of LATTICE93, Dallas, Texas*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **34** (1994) 164.
[67] Matrix Elements of the Singlet Axial Current in the Proton.
(with J. Mandula)
*Phys. Rev.* **D50** (1994) 6931.
[68] Semi-leptonic form-factors from lattice QCD
(with T. Bhattacharya)
*Proceedings of The Albuquerque Meeting, $8^{th}$ meeting of the Division of Particles and Fields of the American Physical Society.*
Ed. Sally Seidel, World Scientific, 1995.
[69] Chiral limit of QCD.
*In the proceedings of LATTICE94, Bielefeld, Germany*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **42** (1995) 85.
[70] Phenomenology from 100 large lattices
(with T. Bhattacharya)
*In the proceedings of LATTICE94, Bielefeld, Germany*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **42** (1995) 935.
[71] Topological density and Instantons on the lattice.
(with J. Grandy)
*In the proceedings of LATTICE94, Bielefeld, Germany*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **42** (1995) 246.
[72] Hadron Spectrum with Wilson Fermions
(with T. Bhattacharya, G. Kilcup, and S. Sharpe)
*Phys. Rev.* **D53** (1996) 6486.
[73] Decay Constants with Wilson Fermions at $\beta = 6.0$
(with T. Bhattacharya)
*Phys. Rev.* **D54** (1996) 1155.
[74] Testing the chiral behavior of the hadron spectrum.
(with T. Bhattacharya and S. Sharpe)
*In the proceedings of LATTICE95, Melbourne, Australia*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **47** (1996) 549.
[75] Lattice analysis of semi-leptonic form factors.
(with T. Bhattacharya)
*In the proceedings of LATTICE95, Melbourne, Australia*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **47** (1996) 481.
[76] Status report on weak matrix element calculations.
(with T. Bhattacharya)
*In the proceedings of LATTICE95, Melbourne, Australia*
*Nucl. Phys.* **B** (*Proc. Suppl.*) **47** (1996) 473.
[77] Matrix elements of 4-fermion operators and B-parameters with Wilson Fermions
(with T. Bhattacharya and S. Sharpe)
*Phys. Rev.* **D55** (1997) 4036.

[78] Comparison of Inversion Algorithms for Wilson Fermions on the CM5.
(with T. Bhattacharya, and G. Kilcup)
Los Alamos Preprint Number LA-UR-96-1115, hep-lat/9605029.

[79] Light Quark Masses from Lattice QCD.
(with T. Bhattacharya)
*Phys. Rev.* **D55** (1997) 7203.

[80] The Extraction of Light Quark Masses From Sum Rule Analyses of Axial and Vector Current Ward Identities
(with T. Bhattacharya and K. Maltman)
*Phys. Rev.* **D57** (1998) 5455.

[81] Light quark masses and the CP violation parameter $\epsilon'/\epsilon$
(with T. Bhattacharya)
*Nucl. Phys.* **B** (*Proc. Suppl.*) **53** (1997) 292.
e-Print Archive: hep-lat/9609046

[82] Staggered fermion matrix elements using smeared operators
(with G. Kilcup and S. Sharpe)
*Phys. Rev.* **D57** (1997) 1654.

[83] B-parameters of 4-fermion operators from lattice QCD
*Nucl. Phys.* **B** (*Proc. Suppl.*) **63A-C** (1998) 278.

[84] Advances in the determination of Quark Masses
(with T. Bhattacharya)
*Nucl. Phys.* **B** (*Proc. Suppl.*) **63A-C** (1998) 95.

[85] Quark Masses, B-parameters, and CP violation parameters $\epsilon$ and $\epsilon'/\epsilon$
in *Physics of Mass* Proceedings of International Conference Orbis Scientiae 1997 II, Miami Beach, Florida, December 12–15, 1997. Edited by B. Kursunoglu, S. Mintz, A. Perlmutter, Plenum Press, 1998.
Los Alamos Preprint Number LA-UR-98-271. hep-ph/9801412.

[86] B Meson Decay Constants From NRQCD.
(with A. Ali Khan, T. Bhattacharya, S. Collins, C. Davies, C. Morningstar, J. Shigemitsu, J. Sloan)
*Phys. Lett.* **427B** (1998) 132

[87] Introduction to Lattice QCD.
Proceedings of LXVIII Les Houches Summer School *Probing the Standard Model of Particle Interactions*, July 28 - Sept 5, 1997, Eds. R. Gupta, A. Morel, E. de Rafael and F. David, North-Holland, 1999.
e-Print Archive: hep-lat/9807028

[88] Wilson versus Clover fermions: A case for improvement
Proceedings of Lattice 98, *Nucl. Phys.* **B** (*Proc. Suppl.*) **73** (1999) 321
e-Print Archive: hep-lat/9810016.

[89] Non-perturbative Renormalization Constants using Ward Identities
(with T. Bhattacharya, S. Chandrasekharan, W. Lee, and S. Sharpe)
Proceedings of Lattice 98, *Nucl. Phys.* **B** (*Proc. Suppl.*) **73** (1999) 276
e-Print Archive: hep-lat/9810018.

[90] Non-perturbative Renormalization Constants using Ward Identities
(with T. Bhattacharya, S. Chandrasekharan, W. Lee, S. Sharpe)
*Phys. Lett.* **461B** (1999) 79
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[91] Heavy-light Mesons and Baryons with $b$ Quarks.
(with A. Ali Khan, T. Bhattacharya, S. Collins, C. Davies, C. Morningstar, J. Shigemitsu, J. Sloan)
*Phys. Rev.* **D62** (2000) 054505
e-Print Archive: hep-lat/9912034

[92] General Physics Motivations for Numerical Simulations of Quantum Field Theory
*Parallel Computing* **25** (1999) 1199.
e-Print Archive: hep-lat/9905027

[93] LATTICE QCD
Core lectures at the VIII Mexican School "Particles and Fields", Oaxaca de Juárez, November 20th – 28th 1998, Eds. J.C. DÓlivo, G.L. Castro, and M. Mondragon,
AIP Conference Proceedings 490, 1999.
Los Alamos Preprint Number LA-UR-99-1916

[94] Spectrum of Mesons and Baryons with $b$ Quarks
Proceedings of LATTICE99(heavy quarks), June 1999, Pisa, Italy
*Nucl. Phys.* **B** (*Proc. Suppl.*) **83-84** (2000) 295
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[95] Order a improved renormalization constants
(with T. Bhattacharya, W. Lee, and S. Sharpe)
Proceedings of LATTICE99(Improvement and Renormalization)
*Nucl. Phys.* **B** (*Proc. Suppl.*) **83-84** (2000) 851
e-Print Archive: hep-lat/9909115

[96] Prospects of calculating $\epsilon_K$ and $\epsilon'$ from lattice QCD
To appear in the Proceedings of KAON 99
e-Print Archive: hep-lat/9908440

[97] Fixed point pure gauge action with $b = \sqrt{3}$ RGT.
(with T. Bhattacharya, and W. Lee)
Proceedings of LATTICE99 (Improvement and Renormalization).
*Nucl. Phys.* **B** (*Proc. Suppl.*) **83-84** (2000) 860
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[98] Non-perturbative improvement of bilinears in unquenched QCD.
(with T. Bhattacharya, W. Lee, and S. Sharpe)
Proceedings of LATTICE99 (Improvement and Renormalization).
*Nucl. Phys.* **B** (*Proc. Suppl.*) **83-84** (2000) 902
e-Print Archive: hep-lat/9909092

[99] Order a improved renormalization constants
(with Tanmoy Bhattacharya, Weonjong Lee, Stephen Sharpe)
*Phys. Rev.* **D63** (2001) 074505
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[100] Light quark masses: A status report at DPF 2000
(with K. Maltman)
Proceedings of DPF 2000
Int.J.Mod.Phys. **A16S1B** (2001) 591
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[101] Improvement and Renormalization Constants in $O(a)$ Improved Lattice QCD
(with T. Bhattacharya, W. Lee, and S. Sharpe)
Proceedings of LATTICE 2000 (Improvement and Renormalization).
*Nucl. Phys.* **B** (*Proc. Suppl.*) **94** (2001) 599
e-Print Archive: hep-lat/0101007
Los Alamos Preprint Number LA-UR-00-5683

[102] Renormalization Constants using Quark States in Fixed Gauge
(with T. Bhattacharya and W. Lee)
Proceedings of LATTICE 2000 (Improvement and Renormalization).
*Nucl. Phys.* **B** (*Proc. Suppl.*) **94** (2001) 595
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[103] Scaling behavior of improvement and renormalization constants
(with T. Bhattacharya, W. Lee, and S. Sharpe)
Proceedings of LATTICE 2001
*Nucl. Phys.* **B** (*Proc. Suppl.*) **106** (2002) 789
e-Print Archive: hep-lat/0111001
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[104] Renormalization Constants using Quark States in Landau Gauge
(with T. Bhattacharya and W. Lee)
Proceedings of LATTICE 2001 (Improvement and Renormalization).
*Nucl. Phys.* **B** (*Proc. Suppl.*) **106** (2002) 786
e-Print Archive: hep-lat/0111002
Los Alamos Preprint Number LA-UR-01-5950

[105] Weak matrix elements for CP violation
(with T. Bhattacharya, W. Lee, and S. Sharpe)
Proceedings of LATTICE 2001
*Nucl. Phys.* **B** (*Proc. Suppl.*) **106** (2002) 311
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## PUBLICATIONS IN STATISTICAL MECHANICS

[S1] Monte Carlo Estimates of the Mass Gap of the O(2) and O(3) Spin Models in 1+1 Dimensions; (with G.C. Fox, O. Martin and S. Otto).
*Nucl. Phys.* **B205** [FS5] (1982) 188.

[S2] Massgap and Scaling in the O(3) Sigma Model in 1+1 Dimension.
CALT-68-1010, and in Ph.D. Thesis (1982).

[S3] Monte Carlo Renormalized Hamiltonian;
(with R. Cordery)
*Phys. Lett.* **105A** (1984) 415.

[S4] Clear Evidence of Redundant Operators in Monte Carlo Studies of the Ising Model;
(with R. Shankar).
*Phys. Rev.* **B32** (1985) 6084.

[S5] Dealing with Truncation in Monte Carlo Renormalization Group Calculations;
(with R. Shankar and G. Murthy).
*Phys. Rev. Lett.* **55** (1985) 1812.

[S6] Open Problems in Monte Carlo Renormalization Group: Application to Critical Phenomena.
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